

**We Claim:**

- 5 1. A blood processing system comprising a blood component product harvested from the blood drawn from an individual, a container sized to receive the blood component product, and a device communicating with the container to remove cytokines or other species of pro-inflammatory or anti-inflammatory stimulators or mediators from the blood component product.
2. A system according to claim 1 wherein the blood component product includes a red blood cell component.
3. A system according to claim 1 wherein the blood component product includes a platelet component.
4. A system according to claim 1 wherein the blood component product includes a white blood cell component.
5. A system according to claim 1 wherein the blood component product includes a plasma component.
6. A system according to claim 1 wherein the device includes an adsorption medium to remove cytokines or other species of pro-inflammatory or anti-inflammatory stimulators or mediators.
7. A system according to claim 6 wherein the adsorption medium is characterized by a Biocompatibility Index of not greater than 14.
8. A system according to claim 7 wherein the Biocompatibility Index is not greater than 7.
- 5 9. A system according to claim 1 or 2 wherein the device includes an adsorption medium to remove cytokines or other species of pro-inflammatory or anti-inflammatory stimulators or mediators, the adsorption medium comprising a polymeric material.

10. A system according to claim 9  
wherein the polymeric material comprises  
particles prepared by polymerization or copolymerization of  
a monomer selected from a group consisting of styrene,  
5 ethylstyrene,  $\alpha$ -methylstyrene, divinylbenzene, di  
isopropenyl benzene, trivinylbenzene, and alkyl  
methacrylate.

11. A system according to claim 9  
wherein the polymeric material comprises  
particles formed from crosslinked polystyrene-type resins  
having a surface modified to minimize activation of blood  
5 complement system.

12. A system according to claim 9  
wherein the polymeric material comprises  
particles formed from a porous hydrophobic divinylbenzene  
copolymer having a surface modified to include surface  
5 exposed functional groups selected from the group of  
polymers of 2-hydroxyethyl methacrylate, N-vinylpyrrolidine,  
N-vinylcaprolactame and N-acrylamide.

13. A system according to claim 9  
wherein the polymeric material comprises  
particles formed by polymerization of aromatic divinyl  
compounds or their copolymerization with aromatic monovinyl  
5 compounds in the presence of porogens or mixtures of  
porogens with properties close to those of  $\theta$ -solvents.

14. A system for collecting a blood component  
product comprising  
means for processing the blood drawn from an  
individual into a blood component product,  
5 a storage container,  
means for collecting the blood component product  
in the storage container, and  
means for removing cytokines or other species of  
pro-inflammatory or anti-inflammatory stimulators or  
10 mediators from the blood component product before, during ,

or after its collection in the storage container.

15. A system according to claim 14  
wherein the blood component product includes a  
red blood cell component.

16. A system according to claim 14  
wherein the blood component product includes a  
platelet component.

17. A system according to claim 14  
wherein the blood component product includes a  
white blood cell component.

18. A system according to claim 14  
wherein the blood component product includes a  
plasma component.

19. A system according to claim 14  
wherein the means for removing cytokines or other  
species of pro-inflammatory or anti-inflammatory stimulators  
or mediators includes an adsorption medium to remove  
cytokines or other species of pro-inflammatory or anti-  
inflammatory stimulators or mediators.

20. A system according to claim 19  
wherein the adsorption medium is characterized  
by a Biocompatibility Index of not greater than 14.

21. A system according to claim 20  
wherein the Biocompatibility Index is not greater  
than 7.

22. A system according to claim 14  
wherein the device includes an adsorption medium  
to remove cytokines or other species of pro-inflammatory or  
anti-inflammatory stimulators or mediators, the adsorption  
medium comprising a polymeric material.

23. A system according to claim 22  
wherein the polymeric material comprises  
particles prepared by polymerization or copolymerization of  
a monomer selected from a group consisting of styrene,  
ethylstyrene,  $\alpha$ -methylstyrene, divinylbenzene, di

isopropenyl benzene, trivinylbenzene, and alkyl methacrylate.

24. A system according to claim 22  
wherein the polymeric material comprises particles formed from crosslinked polystyrene-type resins having a surface modified to minimize activation of blood complement system.

25. A system according to claim 22  
wherein the polymeric material comprises particles formed from a porous hydrophobic divinylbenzene copolymer having a surface modified to include surface exposed functional groups selected from the group of polymers of 2-hydroxyethyl methacrylate, N-vinylpyrrolidine, N-vinylcaprolactame and N-acrylamide.

26. A system according to claim 22  
wherein the polymeric material comprises particles formed by polymerization of aromatic divinyl compounds or their copolymerization with aromatic monovinyl compounds in the presence of porogens or mixtures of porogens with properties close to those of  $\theta$ -solvents.

27. A method for collecting a blood component product comprising the steps of  
processing the blood drawn from an individual into a blood component product,  
collecting the blood component product in a storage container, and  
removing cytokines or other species of pro-inflammatory or anti-inflammatory stimulators or mediators from the blood component product before, during , or after its collection in the storage container.

28. A method according to claim 27  
wherein the blood component product includes a red blood cell component.

29. A method according to claim 27  
wherein the blood component product includes a

platelet component.

30. A method according to claim 27  
wherein the blood component product includes a  
white blood cell component.

31. A method according to claim 27  
wherein the blood component product includes a  
plasma component.

32. A method according to claim 27  
wherein the removing step includes use of an  
adsorption medium to remove cytokines or other species of  
pro-inflammatory or anti-inflammatory stimulators or  
mediators.

33. A method according to claim 32  
wherein the adsorption medium comprises a  
polymeric material.

34. A method according to claim 33  
wherein the polymeric material comprises  
particles prepared by polymerization or copolymerization of  
a monomer selected from a group consisting of styrene,  
ethylstyrene,  $\alpha$ -methylstyrene, divinylbenzene, di  
isopropenyl benzene, trivinylbenzene, and alkyl  
methacrylate.

35. A method according to claim 33  
wherein the polymeric material comprises  
particles formed from crosslinked polystyrene-type resins  
having a surface modified to minimize activation of blood  
complement system.

36. A method according to claim 33  
wherein the polymeric material comprises  
particles formed from a porous hydrophobic divinylbenzene  
copolymer having a surface modified to include surface  
exposed functional groups selected from the group of  
polymers of 2-hydroxyethyl methacrylate, N-vinylpyrrolidine,  
N-vinylcaprolactame and N-acrylamide.

37. A method according to claim 33

5            wherein the polymeric material comprises  
particles formed by polymerization of aromatic divinyl  
compounds or their copolymerization with aromatic monovinyl  
compounds in the presence of porogens or mixtures of  
porogens with properties close to those of  $\theta$ -solvents.